

## ***Panaphis juglandis* (Goeze, 1778) and *Chromaphis juglandicola* (Kaltenbach, 1843) (Hemiptera, Aphididae) in Norway – two aphid species associated with common walnut (*Juglans regia* L.)**

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The two aphid species *Panaphis juglandis* (Goeze, 1778) and *Chromaphis juglandicola* (Kaltenbach, 1843) were recorded on leaves of common walnut (*Juglans regia* L.) in June and July 2014 in the Botanical garden at Tøyen, Oslo. Both species are solely associated with the common walnut, on which they may cause damages both on leaves and fruits. The two species are hitherto not reported from Norway. Biology and distribution are briefly commented on.

Key words: Hemiptera, Aphididae, aphids, *Chromaphis juglandicola*, *Panaphis juglandis*, new records, common walnut, *Juglans regia*, Juglandaceae, Norway.

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### **Introduction**

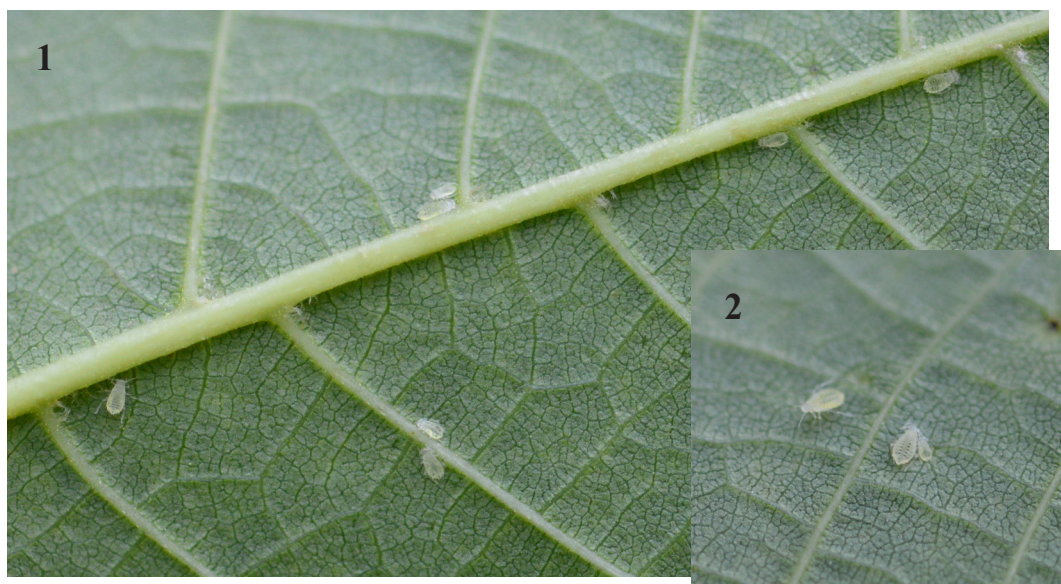
Aphids or plant lice are small to medium sized sap-sucking insects, representing some of the most destructive insect pests found on cultivated plants. They passively feed on sap of phloem vessels in the plants. Some species are monophagous, feeding on only one plant species, while others, like the green peach aphid *Myzus persicae* Sulzer, 1776, are polyphagous, and feed on hundreds of plant species across several plant families (Heie 1982, Dolling 1991, Blackman 2014). Even some are heteroecious and may alternate between two or more host species. Aphids often transmit plant viruses, which is a huge problem in the agriculture because the plants may wilt and die.

Approximately 5000 species of aphids in 510 currently accepted genera are known worldwide (Blackman 2014). About 250 species are serious pests in agriculture and forestry, as well as an annoyance for gardeners.

Recent classification of aphids places the

majority of species in the single family Aphididae, making up the superfamily Aphidoidea. It joins the suborder Sternorrhyncha, together with the superfamilies Aleyrodoidea, Coccoidea, Phylloxeroidea and Psylloidea (Blackman 2014, Nieto Nafria 2014).

Common walnut (*Juglans regia* L.) originates from Central Asia, but has been planted many places around the world, including Europe, mainly for nut production. However, in Norway they are almost only used as ornamental trees, because the nuts are not always ripened due to the short summer season. Eleven aphid species have *J. regia* as hostplant in the Palaearctic region (Blackman 2014), and this paper deals with the first records of two of these walnut associated species in Norway. The species belong to the two genera *Panaphis* Kirkaldy, 1904 and *Chromaphis* Walker, 1870 which, according to Heie (1982), are placed in the subtribe Callaphidina.



**FIGURES 1–2.** Nymphs of *Chromaphis juglandicola* (Kaltenbach, 1843) on the underside of the leaves of common walnut (*Juglans regia*). Oslo, Tøyen 2014. Photos: Lars Ove Hansen.

### The Norwegian aphid fauna

Very little has been published on the Norwegian aphid fauna for the two last decades. The most recent addition to the Norwegian list is *Pterocomma salicis* L. 1758 (Hansen & Rolseth 2004), and no updated list is available. Siebke (1874) presented the first list of aphids from Norway, including a total of 24 species in the first list of Norwegian insects. For more information on the Norwegian aphid fauna see Heie (1980, 1982, 1986, 1992, 1994, 1995). Tambs-Lyche & Heie (1994) lists a total of 329 aphid species occurring in Norway, while the current species number from the Fauna Europaea database (Nieto Nafria 2014) is 396. This number is probably far too low, according to Nieto Nafria (2014) there are 630 registered species in Sweden, while the number for Finland and Great Britain, is 492 and 732, respectively. Taking these numbers in to consideration we would expect at least 150 more species not yet recorded from Norway, which leaves us with the expected number of about 450 species. This is a much larger number than 351, which is expected in Ottesen (1993). This can no longer be considered realistic, since the actual number is now almost the same as the prediction.

### The records and distribution

#### *Chromaphis juglandicola* (Kaltenbach, 1843)

Minor attacks of this species were observed on leaves of common walnut (*Juglans regia*) in the Oslo botanical garden at Tøyen: AK, OSLO: Tøyen (N59.9181° E10.7678° ±50m) 15 June–7 July 2014, Leg. Lars Ove Hansen & Trude Magnussen. Nymphs were observed, and these were found scattered on the underside of the leaves (Figure 1–2), and more abundant than the next species *P. juglandis*. Two alate viviparous females were collected. No ants were observed, even though Heie (1982) reported they may be visited by ants. *C. juglandicola* seems to be solely associated with common walnut *Juglans regia*. Other walnut species like *J. ailanthifolia* Carr., *J. cinerea* L. and *J. mandshurica* Maxim. are also present in the botanical garden, and the nearby Sofienberg park, but none of these trees were observed being attacked by the aphid species. However, a record from *Aleurites moluccana* (L.) Willd. is reported (Blackwell 2014). These observations seem to be in accordance with Heie (1982) and Blackman (2014).

The species is widespread in Europe, from Portugal and Spain, north to Denmark and Sweden.



**FIGURE 3.** Nymphs of *Panaphis juglandis* (Goeze, 1778) on the upperside of the leaves of common walnut (*Juglans regia*). Oslo, Tøyen 2014. Photo: Lars Ove Hansen.

In Denmark known from South Jutland (SJ) and North East Zealand (NEZ), in Sweden from Skåne (Sk), Öland (Öl) and Gotland (Gtl); also Poland and the Baltic region; Northern Africa; eastwards through Central Asia, India and Pakistan to China; introduced to North America (Heie 1982, Nieto Nafria 2014).

### ***Panaphis juglandis* (Goeze, 1778)**

*Callaphis juglandis* (Goeze, 1778)

Minor attacks of this species were observed on leaves of common walnut in the Oslo botanical garden at Tøyen: AK, OSLO: Tøyen (N59.9181° E10.7678° ±50m) 15 June–7 July 2014, Leg. Lars Ove Hansen & Trude Magnussen. Nymphs were observed, and these were found clustered together on the upper side of the leaves along the midrib of the leaves (Figure 3), and less abundant than the former *C. juglandicola*. The species seem to be solely associated with common walnut *Juglans regia*, because other walnut species like *J. ailanthifolia*, *J. cinerea* and *J. mandshurica* are also present in the botanical garden and the nearby Sofienberg park, but none of these were observed being attacked by the aphid species. The observations of *P. juglandis* seem to be in accordance with Heie (1982) and Blackman (2014).

The species is widespread in Europe, from Spain, Italy and Greece, north to Denmark and

Sweden; in Denmark from South Jutland (SJ), East Jutland (EJ) and North East Zealand (NEZ); in Sweden Skåne (Sk); eastwards to Central Asia; also western North America (Heie 1982, Nieto Nafria 2014).

### **Vernacular name**

The vernacular name «tigervalnøttbladlus» is proposed for *P. juglandis*, due to the dark abdominal sclerites and «gul valnøttbladlus» is proposed for *C. juglandicola*, due to the light yellow colour of the species.

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